

TABLE WITH TRUNDLE TABLE ASSEMBLY

This application claims priority to U.S. Provisional patent application number 60/442,882 filed January 27, 2003 for Table with Trundle Table Assembly. This application is incorporated by
5 reference.

BACKGROUND OF THE INVENTION

Technical Field

10 This invention relates to the technical field of furniture, and more specifically to an improved table for changing diapers or otherwise treating infants and toddlers.

A description of the state of the art is provided in the attached appendix which is incorporated by reference that describes the existing line of changing tables and related furniture.

15 A table representing the state of the art is also depicted in Figure 1.

The table **100** has a cast polymer seamless top **104**, or alternatively solid surface or laminate. This top is designed to minimize the hygiene problems from the use of the countertop for
20 changing diapers or otherwise treating infants and toddlers.

The edges of the countertop rise approximately four inches above the work surface **106** to help keep the child on the countertop.

25 The table can use an automatic faucet **112** with tempering valve so that that caregiver can wash hands without handling faucet controls.

A set of trash containers (not shown in Figure 1 but shown in Appendix) can be included in one of the three cabinet panels **116**, **120**, and **124**. The other cabinet panels can be used for storage
30 of cleaning materials and other supplies. These cabinets can be locked. A preferred locking system uses magnetic keys to release the cabinet latch. (not shown in Figure 1) The roll-out trash containers can be left unlocked and rolled out by catching the lower lip of the corresponding cabinet front **116** with the top of the caregiver's shoe as top kick **122** is recessed relative to the cabinet doors **116**, **120**, and **124**.

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This table is well-adapted for use in a child care center or a medical facility to provide a work surface 106 that can be kept hygienic even when used as a diaper changing table. The table surface height and the height of the table lips are well suited for use by a standing caregiver. However, there is a problem when this table or other state of the art tables are used for a segment
5 of the child population requiring diaper changes or other treatment.

The problem is that the caregiver must lift the child up over the top of the table top lip 108. The table as shown in the appendix has a height of 35.75 inches from the floor to the top of the lip 108. (For completeness the width of the table is 62.5 inches and the depth is 25.5 inches).

10 While lifting an infant or young standing toddler and placing the child on the table surface is not an overly challenging task, some children pose a greater challenge for the adult caregiver.

The children that pose difficulty are those children who are unusually heavy and potentially
15 children that must be lifted from a wheelchair. Some children may have medical problems or developmental delays that result in their needing diapers for a longer period of time than other children. As these children grow, they become much heavier to lift than an infant or young toddler.

20 Current practices for working with these heavy children require two caregivers for placement on the changing table or steps are used to help the child climb onto the table. Alternatively, a pad on the floor may be used. (not shown)

The use of two caregivers to lift a child raises a number of problems. This deviation from the
25 normal practice of having a single caregiver attend to changing a diaper means that work must be stopped and a second caregiver located and moved from the caregiver's other tasks. Once the two caregivers are together, they must coordinate the lift so that the caregivers are not injured. There is a risk that a caretaker that is in a hurry to provide services to a number of children may attempt to perform the lift without taking time to get a second caregiver. These solo lifts of
30 heavy children pose a risk for both the caregiver and the heavy child.

Changing the heavy child on the floor is awkward and potentially less sanitary. The supplies which are set for access while the child is on the table top may be inaccessible while the

attendant is working on the floor. Setting the child safely onto the floor raises its own risk of back injury as the caregiver must work in an extreme bent over position. The caregiver may feel compelled to kneel in order to work with the on-floor child and thus soil the knees of the caregiver's clothes.

5 Likewise, the current state of the art table is not suitable or well-adapted for use with certain children in wheelchairs as the movement from the wheel chair requires a two person lift. Lifting from wheel chairs to an elevated table top and then back to the wheelchair is contraindicated for some children due to their medical condition.

10 Thus, there is a need for a table for changing diapers or otherwise treating a broader range of children including heavier children needing diaper changes and children in wheelchairs.

15 It is an object of the present invention to provide a table for changing diapers or otherwise treating infants and young children that eliminates the need to lift the heavy children or those children in wheelchairs to the table surface used for working with infants and toddlers.

It is an object of the present invention to provide a solution that eliminates the problems associated with placing heavy children on the floor in order to work with the child.

20 These and other advantages of the present invention are apparent from the drawings and the detailed description that follows.

BRIEF DESCRIPTION OF THE DRAWINGS

25 Figure 1 provides a front and top view of a prior art changing table with a table top having a four-inch lip and an incorporated sink. Additional information on the prior art is provided in pages A-1 to A-4 of the appendix.

Figure 2 provides a front and top view of a table in accordance with one version of the present invention.

Figures 3 and 4 show two views of a partially constructed table in accordance with a second version of the present invention wherein the trundle table does not extend into the sink compartment and the trundle table includes an optional integrated drawer.

Figure 5 shows a version of the present invention before the addition of the faucet and with the trundle table assembly extended to show a cabinet front on the trundle table assembly.

DETAILED DESCRIPTION OF THE DISCLOSED EMBODIMENT

The present invention will now be described more fully hereinafter with reference to the accompanying drawings, in which preferred embodiments of the invention are shown.

This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. Like numbers refer to like elements throughout.

Figure 2 differs from Figure 1 in that a trundle table assembly **204** has been added to the table **200**. The trundle table assembly **204** has a trundle table platform **208** with a trundle table top **210**. The trundle table top **210** has a work surface **212** and table top lip **216**. The table top lip **216** differs from table top lip **108** in that the lip is only on the two long sides. In contrast, the table top lip **108** extends around the entire perimeter. A difference between the changing table top **106** and the trundle table top **210** is that the trundle table top **210** does not have a sink basin.

The trundle table assembly **204** extends out from the closed position to an open position on glides. (See Figures 3 and 4). One preferred set of glides hardware is 500 pound test glides manufactured by Hettech.

Optionally, the volume above the trundle table assembly **204** and the table top **104** can contain pull out drawers **220** and **224** or cabinets (not shown). These drawers or cabinets can be locked with magnetic locks as referenced above.

- 5 In a preferred embodiment, the trundle table assembly would have a cabinet front and a drawer pull. These items are omitted from Figure 2 to allow other elements to be clearly seen but are illustrated in Figure 5.

The steps to place a heavier child on the trundle table assembly are as follows:

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A) Unlock the trundle table assembly and pull the trundle table assembly out. In the preferred embodiment the glides are locked in the out position.

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B) Place the child at either end of the trundle table without the table lip with the child's back to the table.

C) Lay the child onto the table and pull the child to re-center the child on the work surface **212** as desired.

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D) When using one version of the present invention (not shown), the recentering step is replaced by pulling out a trundle table sub-assembly that is positioned in the trundle table assembly and pulls out on another set of glides orthogonal to the trundle table assembly glides to extend a foot rest. Ideally, the foot rest is extended away from the sink so as to allow cabinet door 126 to open while the foot rest is extended.

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In a preferred embodiment of the present invention, a foot rest is not provided and the child's feet can remain on the ground adjacent to the trundle table assembly. This has the advantage of allowing an older and heavier child to assist in the diaper change by pushing onto the floor to raise the lower torso in order to make it easier to remove and replace the diaper.

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In one preferred embodiment, the work surface **212** is 13.5 inches from the floor. If the child is placed onto the table from either lipless end, then the lift height has been reduced approximately

22 inches. Many larger children can go from standing to lying down without ever lifting the child entirely into the air.

To accommodate taller children, the trundle table assembly 204 can extend into the compartment adjacent to the sink drain 114 so that cabinet door 126 is "L" shaped. Alternatively, cabinet door 124 can be left as shown in Figure 1 and the trundle table can terminate below drawer 224. (See Figures 3 and 4).

The reduced height of the trundle table work surface 212 facilitates lateral transfer of children from wheelchair and back to height D rather than traversing over table top lip 108 to use table top 104.

Alternate Embodiments

Figures 3 and 4 show a partially constructed table with trundle table assembly. The partially constructed unit does not have the table tops. The trundle table assembly is shown extended rather than in a closed position. The trundle table assembly has an optional trundle table drawer. Note that this trundle table assembly of Figures 3 and 4 does not extend into the sink compartment that will be covered by cabinet door 124.

Those skilled in the art will recognize that the methods and apparatus of the present invention have many applications and that the present invention is not limited to the specific examples given to promote understanding of the present invention. Moreover, the scope of the present invention covers the range of variations, modifications, and substitutes for the system components described herein, as would be known to those of skill in the art. For example, one of skill in the art could modify the table according to the present invention to remove the faucet and sink. While it is convenient to have these items incorporated in the table with trundle table assembly, they could be incorporated in another countertop placed in proximity to the table with trundle table assembly. Thus, the present invention is not limited to tables with integrated sinks.

While a particular use for this table with trundle table assembly is as a diaper changing table, the invention is not limited to diaper changing tables and can be employed in other environments where patients need to be placed on a table for treatment. This would include facilities providing

medical services to children. The teachings of the present invention could be adapted for use in a veterinary office to preclude the need to lift heavier dogs or analogous animals to the treatment table used for lighter dogs and cats. These uses are illustrative and not exhaustive.

- 5 Diaper changing tables in accordance with a version of the present invention, can be used in a variety of locations including, but not limited to, daycare centers, child development centers (special needs children) and other schools for young children.

- 10 In order to promote clarity in the description, common terminology for components is used. The use of a specific term for a component suitable for carrying out some purpose within the disclosed invention should be construed as including all technical equivalents which operate to achieve the same purpose, whether or not the internal operation of the named component and the alternative component use the same principles. The use of such specificity to provide clarity should not be misconstrued as limiting the scope of the disclosure to the named component
- 15 unless the limitation is made explicit in the description.